THE CHEMIST

APRIL 1949 VOLUME XXVI No. 4

REV. JAMES J. PALLACE, S. J.

Associate Professor, Canisius College
Chairman, Niagara Chapter, A.I.C.

(*See page* 128)

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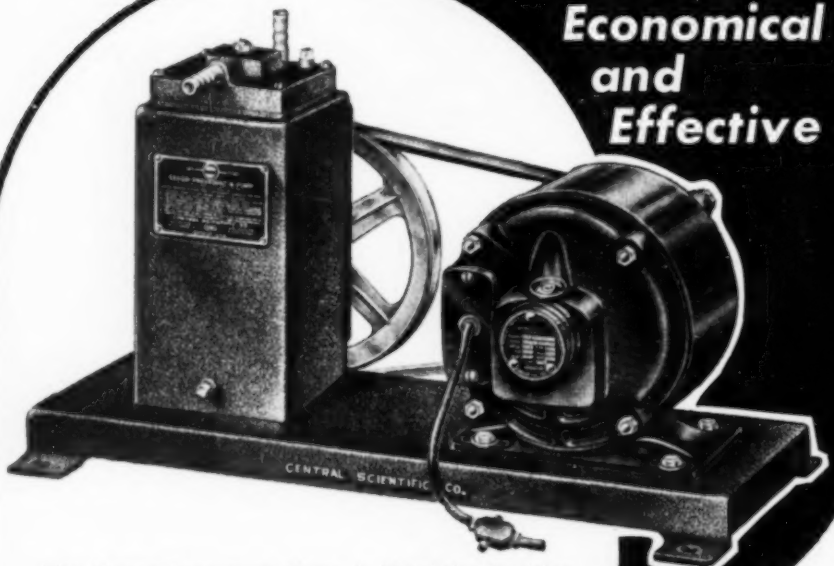

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Publication of

THE AMERICAN INSTITUTE OF CHEMISTS, INC.
60 East 42nd Street, New York 17, N. Y.

Volume XXVI April 1949 Number 4

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Entered as second class matter April 8, 1936, at the Post Office at New York, N. Y., under Act of August 24, 1912. Issued monthly at 60 East 42nd Street, New York 17, N. Y. Subscription price, $2.00 a year. Single copy, this issue $0.25. Copyright, 1949, by THE AMERICAN INSTITUTE OF CHEMISTS, INC.

SCHEDULED FOR FUTURE ISSUES

Manpower and Industry. By H. B. DeVinny.
How Can A Chemist Increase His Value? By C. P. Neidig, F.A.I.C.
Industry Looks to Education. By Dr. Frank M. Surface.
Best Foot Forward. By Luella Canterbury
The Qualities of the Good Research Man. By Dr. Maurice J. Kelly, F.A.I.C.
How Good an Employer Is Your Company? By Howard Nechamkin, M.A.I.C.
Vocational Guidance Conference—a Report
Has the Chemists' Professional Status Improved? A Survey
Other Material.

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Annual Meeting

The program for the A.I.C. Annual Meeting (See pages 117 and 118) has been enlarged this year to include technical papers in cooperation with the University of Chicago and the Illinois Institute of Technology. Members of the Institute are cordially invited to attend the technical sessions on May 6th, the professional sessions on May 7th, and the Medal Presentation Banquet to be held on the evening of May 7th. Guests are welcome. Reservations for hotel rooms should be sent directly to the Edgewater Beach Hotel, 5349 North Sheridan Road, Chicago, Illinois. Reservations for the Medal Presentation Banquet (Tickets $4.50) should be sent to Miss Mary Alexander, Universal Oil Products Company, 310 South Michigan Avenue, Chicago 4, Illinois. The general chairman, of the Committees of the Chicago Chapter under whose auspices the 1949 Annual Meeting is being held, is Dr. Vanderveer Voorhees, F.A.I.C., 910 South Michigan Avenue, Chicago 80, Illinois.

New Directory Planned

A new Directory of the members of THE AMERICAN INSTITUTE OF CHEMISTS is in course of preparation. The names of members, their positions, business addresses, and mailing address if it differs from the business address, will be included. A card will be mailed to each member soon. To insure that your name, your position, and your firm are correctly listed in the new directory, please fill out the card and return it promptly.

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PROGRAM
Annual Meeting 1949

THE AMERICAN INSTITUTE OF CHEMISTS
in cooperation with the University of Chicago and Illinois Institute of Technology

Edgewater Beach Hotel, Chicago, Illinois, May 6-7, 1949

FRIDAY, MAY 6

9:00 a.m. —Registration.

10:30-12:00 a.m.—Technical Session, Joint with Illinois Institute of Technology.

"Jet Propulsion and Jet Fuels," John T. Rettalliata, Dean of Engineering, Illinois Institute of Technology.

"Problems of Mixing," John Henry Rushton, Director, Department of Engineering, Illinois Institute of Technology.

12:00 Noon —Luncheon meeting of A.I.C. National Council.

2:00- 5:30 p.m.—Technical Session, Joint with Institute for the Study of Metals, Institute for Nuclear Studies, and Institute of Radiobiology and Biophysics, University of Chicago.

"Nuclear Processes in the Atmosphere," John A. Simpson, Jr., Assistant Professor of Physics, Department of Physics and Institute for Nuclear Studies.

"Age Determination by Radio-carbon Content; World-Wide Assay of Natural Radio-carbon," Willard F. Libby, Professor of Chemistry, Institute for Nuclear Studies.

"The Measurement of Temperatures of Oceans of Past Geological Ages," Harold C. Urey, Distinguished Service Professor of Chemistry, Department of Chemistry and Institute for Nuclear Studies.

"Some Applications of Scintillating Crystals in the Field of X-rays and Radioactive Materials," Robert J. Moon, Assistant Professor of Physics, Institute of Radiobiology and Biophysics.

"Oxide Film Studies of Metals," T. N. Rhodin, Jr., Instructor, Institute for the Study of Metals.

7:30 p.m. —Annual A.I.C. business meeting.

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SATURDAY, MAY 7

9:00 a.m. —Late Registration.

10:00-12:00 a.m.—Symposium, "What Can Be Done to Stimulate Basic Research?"

"How Germany Did It," Roger Adams, Chairman, Department of Chemistry, University of Illinois.

"Who Should Support What Research?" C. C. Furnas, Director, Cornell Aeronautical Laboratories.

"The Role of Universities and Industry-Financed Research," Speaker to be announced.

12:00 Noon —Luncheon, Massachusetts Institute of Technology Chemists.

2:00- 5:30 p.m.—Symposium, "The Chemist Looks at His Future."

"The Chemist's Economic Status," Louis Koenig, Armour Research Foundation.

"The Chemist His Own Employer," Otto Eisenschiml, Scientific Oil Compounding Company.

"Advantages of the Industrial Laboratory," Edward L. Gordy, Standard Oil Company (Indiana).

"Extension of Chemistry into Non-Chemical Industries," Earl P. Stevenson and Raymond Stevens, Arthur D. Little & Company.

"Governmental Impingements Upon Industrial Research," John W. Anderson, Nattional Patent Council.

6:00 p.m. —Reception for Professor Warren K. Lewis, Medalist.

7:00 p.m. —Medal Award Dinner.

"Introductory Remarks," Lawrence H. Flett, President, The American Institute of Chemists.

"The Medalist," Francis J. Curtis, Vice President, Monsanto Chemical Company.

"The Professional Achievements of Warren K. Lewis," James R. Killian, Jr., President, Massachusetts Institute of Technology.

Medal Address, Warren K. Lewis, Emeritus Professor of Chemical Engineering, Massachusetts Institute of Technology.

More Pathologist–Clinical Chemist Controversy

Dr. Foster D. Snell, F.A.I.C.

Past President, A.I.C.

(One of a series of editorials being prepared by members of the Council of The American Institute of Chemists.)

HISTORICALLY, in 1924 the American Chemical Society, the American Medical Association, and the American Association of Pathologists and Bacteriologists agreed that (1) no professional individual or organization should be required to place itself under the direction of a representative of another profession and (2) that at least these three organizations would cooperate when legislation is proposed. The AMA started to break the agreement in 1926 although it is still officially in effect.

In 1949 there is before the New Jersey legislature a bill which says "Any person shall also be regarded as practicing medicine and surgery, within the meaning of this chapter, who makes any examination, test or analysis of any fluid, excretion, secretion or tissue of the human body or of any organism contained therein, where such examination, test or analysis is made for use or is used in connection with the diagnosis or treatment of any human disease, pain, injury, deformity or physical condition or for the confirmation of such diagnosis or treatment." A grandfather clause is provided.

Currently a National Board to certify chemists qualified for clinical chemistry is being set up with a nine-man board on which the AIC is represented. That is one method of defense.

What else to do! Every AIC member in New Jersey has been advised and asked to protest to the members of the New Jersey Senate Committee on Public Health. If you live in New Jersey, write now to Kenneth C. Hand, Elmer H. Wene, C. Wesley Armstrong, Jr., and Anthony J. Cafiero at State House, Trenton, New Jersey, with copies to A. J. Nydick, 270 Broadway, New York 7, N. Y. The Institute is actively guiding the opposition. Only the New Jersey Chapter can appear officially.

At present any one can call himself a chemist. Some concrete way of policing our profession is needed to prevent unqualified persons from representing themselves as chemists. If we had it, we should be less vulnerable to such attacks. In other professions it is done through licensing.

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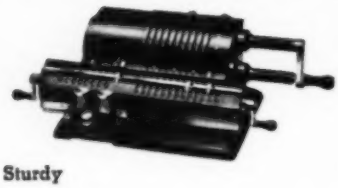

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Kolthoff Receives Nichols Medal

Dr. I. M. Kolthoff, F.A.I.C., of the University of Minnesota, was presented with the William H. Nichols Medal, March 11th, at a joint meeting of the New York Section of the American Chemical Society and the Society of Chemical Industry, held at the Hotel Statler, New York, N. Y. C. F. Rassweiler, F.A.I.C., chairman of the New York Section, presided.

The medal citation to Dr. Kolthoff reads: "For world leadership in integrating into modern analytical chemistry the pertinent branches of physical science, for outstanding service in the training of analytical chemists, and for rich contributions to the theories of solutions, especially interfacial phenomena and electrode recations."

New Officers

The Commercial Chemical Development Association announces the election of the following officers: President, C. D. Goodale, Commercial Solvents Corporation, Terre Haute, Indiana; vice president, F.A. Soderberg, General Dyestuff Corporation, New York, N.Y.; Treasurer, C. W. Walton, Minnesota Mining and Manufacturing Company, St. Paul, Minnesota, and executive secretary, G. O. Cragwall, Charles Pfizer and Company, Inc., Brooklyn, New York.

Scientific Manpower and the Universities

Dr. B. D. Van Evera, F.A.I.C.

Professor of Chemistry and Head of the Chemistry Department, The George Washington University, Washington, D. C.

(A talk given at a recent meeting of the Washington Chapter, A.I.C.)

THE universities' role in the scientific manpower picture is very largely that of producer. It is true that a relatively small number of scientists are employed as teachers. It is also true that a number of the universities have gone into the field of contract research in a big way, and in a few cases employ scientists by the score, or even by the hundreds, purely as research personnel. But, in any case, the total so employed by the universities makes up only a small fraction of the total scientific manpower of the country.

That the universities have had a difficult time during the past few years is common knowledge. Just how difficult those times have been, however, is probably not appreciated by those not immediately faced by a veritable tidal-wave of entering students. Faculties had been pared to a minimum during the war—or had been given war-leave. Between V-J Day, in August 1945, and the opening of the winter term in January or February 1946, faculties had to be restored and augmented, large classrooms had to be obtained where small ones had sufficed before, and additional facilities for laboratory courses had to be provided. This was an Herculean task to be done at a time of critical shortage of both men and materials. Small wonder if a few courses were not as well offered as they had been in the days when the ivory towers were real ivory. On the whole, the American education system has done an excellent job of caring for the one million G.I.'s, the thousands of non-G.I.'s whose education was voluntarily stopped to enter civilian war work, and the sons and daughters of families, who, due to high current wages in a number of fields, are now able, for the first time, to afford a college education.

The stratagems that were adopted to meet the needs were many and varied. At The George Washington University with no new construction, we increased the effective laboratory space available for instruction in elementary chemistry by using discarded boxes in which shells for the Chemical Warfare Services' 4.2-inch mortar are shipped. The boxes are expendable, and we got them in less

than a week, whereas the best estimate we could get to manufacture suitable boxes was over a month—if the lumber could be found. The students' equipment is kept in one of these boxes, and the boxes for an entire class are loaded on trucks and stored in the basement. In this way, and by running laboratories from eight a.m. to ten p.m., we increased the effective capacity of one laboratory from 320 to 960. This application to the Biblical injunction to beat our swords into ploughshares, plus the adoption of some modern manufacturing techniques for handling materials, has been quite satisfactory, as well as economical.

Other universities used other and probably better devices to meet their needs as they arose. All in all, the teaching profession met the problem squarely, solved it adequately, and as a member of that profession, I am proud of it.

Degrees Awarded in all Fields of Learning, 1947-1948

	1947-48	Previous High	Per Cent. Increase
Bachelor's	266,893	186,500	43.11
Master's	41,716	26,731	56.06
Doctor's	4,439	3,497	26.94

The great increase in numbers of students since the war is only now being reflected in increasing numbers of graduates. The school year 1947-48 saw the greatest number of persons receiving degrees in the history of the country. Note that the largest increase, 56 per cent, came in the master's degree, which may be obtained in one or two years. It may be expected that even greater numbers of graduates will receive diplomas in the next few years.

Degrees in 1947-48

	Sciences	Engineering	Total
Bachelor's	37,366	29,841	67,207
Master's	6,246	3,849	10,095
Doctor's	1,527	233	1,760

The above statistics are those of the U. S. Office of Education.

Chemistry and Chemical Engineering 1947-1948

	Chemistry	Chemical Engineering	Total
Bachelor's	7,183	3,626	10,809
Master's	1,306	882	2,188
Doctor's	523	71	594

Note that the total graduate degrees is about one-fourth of the total bachelor's degrees. One-fourth, then, of our bachelor's graduates have gone into graduate work to replace those who just received advanced degrees, and, if the graduate schools are growing, more than one-fourth have gone to graduate school and and so were not available for employment.

This, then, is the picture of what grew in our universities last year. What of the future?

The report of the President's Commission on Higher Education is of little help. True, it says that there should be 4,600,000 individuals in college by 1960 (they estimated that there were 2,300,000 in college in 1947), but the report is very general and has the air of a missionary tract in the way it attempts to give something (meaning education) to everyone, even though they may not want

it. I am afraid, therefore, that their estimates must be dismissed as wishful thinking.

Last year, the Office of Scientific Personnel of the National Research Council circulated a questionnaire to a large number of colleges for the purpose of determining first, how many graduates in science there were in 1948, and second, how many students of junior status there were enrolled at the same time. These juniors were presumably the individuals who would achieve baccalaureate degrees in 1949. Let me emphasize that these figures did not cover all the institutions of higher learning in the United States, but I believe that a fair sampling was achieved. These numbers indicated that there would be roughly fifty per cent more graduates in science in 1949 than there were in 1948. In chemistry the indication was that the increase would be forty per cent. If true, this would mean that some 15,000 young people will receive bachelor's degrees in 1948-49 in the fields of chemistry and chemical engineering.

It has not been possible to get concrete data on how many master's and doctor's degrees may be expected this year. The smaller number of individuals makes studies in this field perhaps less attractive to the statisticians, and the uncertainties of research make any results somewhat less reliable. So all we can do is guess.

My guess is that there will be a great flood of individuals with advanced degrees this year—at least in the field of chemistry. One department head expects to grant about twenty-five Ph.D.'s during the academic year 1948-49, whereas he granted only five last year. Other reports are not far different. It would not be surprising if the total number of Ph.D.'s in science for 1948-49 reached 1500, or nearly three times the number for the preceding year.

Why this big number? It takes at least three and usually four years after the bachelor's to attain a Ph.D. From 1941 to 1945, very few men getting their bachelor's degrees went to graduate school. Instead they went into the army, into civilian production for the army, or into research for the NDRC or the armed forces. After V-J day, they wrote their final reports and got back to school, a great many in 1945, even more in 1946; 1945 and 4 are 1949. That is the reason why there will be a flood of Ph.D.'s this year.

The flood will continue. I have heard of no graduate school that has had a shortage of entering students any year since the war. So, the mill having been kept full, the flour will continue to come out.

Training in science does not end with the Ph.D. any more. Post-doctoral training is a must in the complete training of the modern scientist. The wonderful work done by the Na-

tional Research Council Fellowships since they were first awarded in 1919 has been increasingly augmented as the value of post-doctoral training has become increasingly apparent. Pre-war, this support came from industry and from the estate of one of those multi-millionaires whose passing from the American scene is to be much regretted — the Rockefeller Foundation. RCA, Merck and Company, General Electric, the Bell Telephone system and others too numerous to mention have joined the movement, realizing that they will benefit in direct proportion as American science benefits. Last year, the Government entered the picture through the Atomic Energy Commission, which established a large number of fellowships, over three hundred in all, on both the pre-doctoral and post-doctoral level.

These fellowships, and others like them that doubtless will be established, should help produce not only more, but better scientists for America. Better scientists, because a student who has had a good meal and who does not have to worry about where the next one is coming from can do better graduate work than one whose financial, and therefore, his gastronomic, future is uncertain. In this way we will have for years to come a continuous supply of the life-blood of American industry, individuals well trained in the basic sciences.

Snell to Receive Chemical Industry Medal

Dr. Foster Dee Snell, F.A.I.C., president of Foster D. Snell, Inc., New York, N. Y., has been named by unanimous vote of the council of the Society of Chemical Industry, London, England, to receive the Society's Gold Medal for 1949.

The medal is awarded bi-annually by the Society's council to a person "who has attained eminence in applied chemistry." The medal was first awarded in 1896, and has since been awarded to only one American, Professor Ira Remsen of Johns Hopkins University in 1904.

Dr. Snell will receive the medal at the Society's meeting at Manchester, England, on July 13th, when he will deliver an address on a phase of surface activity. His special field of interest is surface active phenomena, which embraces the action of soaps, detergents, wetting agents, and similar products. He has been engaged in applying science to the problems of industry as a consulting chemist in New York and Brooklyn for nearly thirty years. He heads the consulting firm bearing his name. He was for many years Honorary Secretary of the American Section of the Society of Chemical Industry, and has been its chairman. He is a past president of THE AMERICAN INSTITUTE OF CHEMISTS.

Patentable Inventions and Patent Rights

Elementary Principles

A. J. Nydick, F.A.I.C.

Patent Attorney, New York, N. Y.

(This is the third of a series of papers prepared by members of, and reviewed before publication by, the Member Advisory Committee, New York Chapter A.I.C.)

ALTHOUGH many chemists and chemical engineers are today fairly conversant with some of the basic principles pertaining to patents, we find that a goodly number frequently pose questions evidencing unfamiliarity with such principles.

Nature of Patentable Inventions

Patents are granted for new and useful products and processes. A patent is granted only if there be an invention. A patentable invention has been defined as a conception of a means of accomplishing a useful result and the reduction of the conception to practice.

In order to avoid the loss of time involved by merely duplicating that which has been done before, it is best to survey the literature before proceeding to carry on experiments in order to determine whether a conception has merit.

It is to be noted that searches, particularly in chemical cases should cover *Chemical Abstracts, Chemische Zentralblatt, British Abstracts, Industrial Arts Index,* and the Patent Office public records. The outstanding encyclopedias, such as Beilstein, Gmelin, Mellor, Thorpe, etc., should also be reviewed.

Full and complete notebooks of the work done should be carefully preserved. Such notebooks should contain an understandable record of conceptions, as well as all of the experimental data.

If possible, every effort should be made to establish corroboration by witnesses of the progress of perfecting an invention at all stages from the original conception thereof to ultimate reduction to practice.

Such corroboration can be achieved by showing the notebooks, the products, the methods employed, etc., to persons in whom one can confide and who *fully understand* what they see and what is told to them.

When it is felt that invention should be patented, the inventor can and should help the patent attorney who is preparing the application by pointing out (a) the deficiencies of prior products or processes; (b) the

advantages of the invention; and (c) the particulars in which the invention differs from prior products or processes.

Infringements

The owner of a patent freguently is of the opinion that his rights are being infringed and is surprised when his attorney informs him that the apparently infringing product or process falls outside the scope of the claims.

The claims of the patent define the limits of the patentee's monopoly. Those limits may be severely rigid or relatively elastic, depending upon the narrowness or the broadness of the invention. A study of the Patent Office file wrapper will disclose the extent to which the inventor himself restricted the scope of the claims in order to overcome references cited by the Examiner during the course of the prosecution of the application.

If one is charged with infringement, the literature should be searched in order to find if there are anticipating references which the Examiner overlooked. It is also important to exert every effort to find out if an anticipating product or anticipating process was in public use or public sale at least one year before the filing date of the application which matured into the patent.

If one feels that his patent is being infringed, study the claims carefully and then decide whether they cover the offending product or process.

Ownership of Patents and Licenses

There is a great deal of misunderstanding concerning the ownership of patent rights to inventions. Some of the pertinent points are as follows:

Where a person is employed to invent, the inventions made in carrying out the duties of that employment belong to the employer. This fundamental principle is equally as applicable to the consultant who is retained by a client to carry on a research project as it is in the instance of the salaried employee.

Where a person is not employed to invent, but uses the facilities of the employer in perfecting an invention, the inventor owns the patent but the employer has an unwritten, implied license called a "Shop Right" to practice the invention.

As to licenses granted by the owner of the patent to another to practice the invention, it is to be noted that such licenses are legal contracts and, like all legal instruments, they should be carefully drawn after the fullest negotiation.

In carrying on negotiations for the licensing of a patent, the following should be considered: duration, royalty rate, rights of cancellation by either party, duty to defend if charge is made that another's patent is infringed, who bears the expense of pursuing infringers, and many other items that inevitably arise when a business deal is being closed.

We Present the Chapters

Brief stories about a number of the Chapters of the A.I.C. have already been published in THE CHEMIST from time to time. We are happy to add that of

The Niagara Chapter

Rev. James J. Pallace, S.J., *Chairman*

ON January 9, 1932, a group of a dozen chemists from the Niagara Frontier met and formed the Buffalo Chemists' Club. Approximately half the members of this group were already members of THE AMERICAN INSTITUTE OF CHEMISTS and the prime purpose of the gathering was to organize a local chapter of the INSTITUTE. It was not very long before a sufficient number of members signified in writing that they were in favor of the formation of a local chapter. The charter was granted in December 1932, and the Niagara Chapter, A.I.C., was born.

Most of the preliminary work of organization was done by Dr. Howard W. Post, professor of chemistry at the University of Buffalo. Moreover, he served as secretary-treasurer for the first four years of the Chapter's existence, and then one year as vice chairman, and one year as chairman.

The first officers of the Niagara Chapter were: Chairman, William J. Cotton; vice chairman, Maurice C. Taylor; secretary-treasurer, Howard W. Post; chapter representative, John F. Williams.

The Niagara Chapter has conducted several interesting symposia which have been published in THE CHEMIST. Among these were, "The Chemist and Industry," "Chemists' Contracts," "Licensing," "Cost Accounting," and "Educational Requirements for Secondary School Teaching."

In 1936, the Niagara Chapter was host for the Annual Meeting of the A.I.C., which was held at the Statler Hotel in Buffalo.

Five members of the Niagara Chapter have received the Schoellkopf Medal, the annual medal award of the Western New York Section of the American Chemical Society. One of these was Lawrence H. Flett, our new national president of the INSTITUTE. Mr. Flett was vice chairman of the Niagara Chapter in 1943-1944 for a short time before being transferred to New York. Marvin J. Udy, the recipient of the Schoellkopf medal in 1948, is vice chairman for this year. Others who brought this same honor to the INSTITUTE were Dr. Alexander Schwarchman, the late Dr. Raymond R. Ridgway, and the late Arthur W. Burwell.

Maurice C. Taylor is the only

surviving, active member of the small group that first met in January 1932. During the past year, he was chairman of the Western New York Section of the American Chemical Society.

Dr. M. H. Fleysher is secretary-treasurer of the Niagara Chapter, and Lester F. Hoyt is national councilor.

The Niagara Chapter's Chairman

Father James J. Pallace, S.J., is associate professor of chemisthy at Canisius College, Buffalo, New York, where he teaches undergraduate and graduate courses in physical chemistry.

A native of New York city, Father Pallace entered the Society of Jesus in 1927 upon graduation from Xavier High School. He studied at Boston College and Fordham University, where he was instructor in chemistry from 1934 to 1937. Upon completion of his theological and ascetical studies in 1942, he was assigned to Canisius College.

Father Pallace is also active in other scientific organizations. He is a member of the American Chemical Society and chairman of the Education Committee of the Western New York Section. He is a member of the American Association for the Advancement of Science and the Chemical Corps Association. Since 1946, he has been chairman of the Chemistry Section of the Jesuit Science Association, Eastern States Division.

Chemistry may well be called his avocation since his primary vocation is that of a priest. However, he combines the two in his position as a teacher and a guide for the young men starting out in the chemical world.

Simha Elected to Sigma Xi

Dr. Robert Simha, F.A.I.C., consultant to the Division of Organic and Fibrous Materials of the National Bureau of Standards, has been elected to honorary membership in the Society of Sigma Xi. Dr. Simha is recognized for his research in high polymers. His investigations have been concerned with hydrodynamic aspects of colloids; viscosity of gases, liquids, and solutions; the theory of the physical properties of polymers, and polymerization reactions. He received the Ph.D. degree from the University of Vienna in 1935. In 1945 he joined the National Bureau of Standards. He received the Lalor Foundation Award in 1940, the Washington Academy of Sciences Award in 1945, and the A. Cressy Morrison Award from the New York Academy of Sciences in 1948. He represented the Bureau of Standards at the Intenational Rheological Congress meeting in Scheveningen, Holland, in September 1948.

Industrial Movies Sought

Lloyd F. Brooke, chairman of the Movie Committee for the Pacific Chemical Exposition to be held November 1-5, 1949, is searching for industrial and educational movies which can be previewed for possible inclusion in the movie program which will run continuously during the Exposition. Suggestions should be sent to him in care of the California Research Corporation, Richmond, California.

Bivins Appointed

Franklin H. Bivins, F.A.I.C., has been appointed assistant vice president of Bristol-Myers Company, New York. He has been connected with the company since 1941. Lee H. Bristol, executive vice president was appointed president, and Henry P. Bristol, president, became chairman of the Board.

Dr. Walter J. Baeza, F.A.I.C., president, Industrial Research Company, New York, N. Y., who is in charge of the American Chemical Society's Middle Atlantic Regional Clearing House, spoke before more than one hundred students and faculty members of Brooklyn College and Fordham University, on the training and placement of chemists. He emphasized that in spite of national reports of increasing unemployment, there are still more openings for professional chemists and chemical engineers than applicants.

Longenecker to Grasselli

William Longenecker, M.A.I.C., is now head of the Chemical-Biological Coordination Center of the Grasselli Chemicals Division, of E. I. du Pont de Nemours & Company, Wilmington, Delaware. He was formerly with the National Institutes of Health, Bethesda, Maryland.

Harry Bennett, F.A.I.C., announces that glyceryl mono-oleates are now being produced by a new process. Two grades are being manufactured by Glyco Products Co., Inc., 26 Court Street, Brooklyn, N.Y.

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New International Temperature Scale

On January first, the National Bureau of Standards began using the definitions of the International Temperature Scale of 1948 in its own research program and in calibrating instruments for other scientific and industrial purposes. Based on a draft prepared by Bureau members, the new scale was adopted at Paris by the Ninth General Conference on Weights and Measures in October 1948. The International Temperature Scale was first established in 1927. This scale is based upon six reproducible equilbrium temperatures, or "fixed points," to which numerical values are assigned, and upon specified interpolation formulas relating temperature to the indications of specified standard temperature-measuring instruments.

The scale is designed to conform, as nearly as practicable, to the thermodynamic Celsius scale. (The Ninth General Conference decided to abandon the designation "Centigrade" and use "Celsius" instead.) The six fixed points of the 1927 scale were the boiling point of oxygen (-182.97°C), the freezing and boiling point of water, the boiling point of sulfur (444.60°C), the melting point of silver (960.5°C), and the melting point of gold (1063°C). From -190° to 660°C, the measure of temperature was based on the indications of a standard platinum-resistance thermometer used in accordance with specified formulas. From 660°C to the gold point, a platinum-platinum rhodium thermocouple was the reference instrument; and above the gold point, the optical pyrometer has been standard.

The same fixed points, with one slight modification, are specified in the 1948 scale. Only two revisions in the definition of the scale result in appreciable changes in the numerical values assigned to measured temperatures. One of these is the change in value for the silver point from 960.5° to 960.8°C. The adoption of a new value (1.438 cm-deg) for the constant c_2 in the radiation formulas changes all temperatures above the gold point. In the new scale Planck's radiation formula is specified instead of Wien's for calculating temperatures above the gold point as observed with an optical pyrometer.

Symposia

The National Bureau of Standards plans two symposia on the utilization of automatic digital computing machinery to be held in June, 1949, at the Bureau's Institute for Numerical Analysis in Los Angeles, California. The first symposium will be on "Construction and Applications of Conformal Maps;" the second on, "Probability Methods in Numerical Analysis." Information may be obtained from Dr. J. H. Curtiss, Institute for Numerical Analysis, Los Angeles 24, California.

Necrology

Frank Moore Beegle

Frank Moore Beegle, research chemist, consultant, and president of Protective Coatings Corporation of Des Plaines, Illinois, died at his home in La Grange, Illinois, during the evening of February 22, 1949, at the age of fifty-nine.

Dr. Beegle was born in Blair County, Pennsylvania, June 19, 1889. He was graduated from Pennsylvania State College in 1911. After five years at the Ohio State Experimental Station, Wooster, he resumed his formal education as a Harriman Foundation scholar at Columbia University, where he received the Ph.D. in 1918.

He was a Fellow of THE AMERICAN INSTITUTE OF CHEMISTS, a member of the American Chemical Society, Chemical Arts Forum, Institute of Technologists and the Paint and Varnish Production Club. His honor societies included Phi Kappa Phi, Sigma Xi, and Phi Lambda Upsilon.

Dr. Beegle was widely known in paint and varnish circles. During the first World War, he served with the Bureau of Aircraft Production primarily in the development of wing fabric dopes. After the war he joined the Norfolk Varnish Company of Norfolk, was plant superintendent of Glidden's Cleveland plant; chief chemist of Dodge Brothers of Detroit, and general manager of the old Cleveland Varnish Company. More recently he was connected with Congoleum Nairn at Marcus Hook, Pennsylvania; director of research at Inland Steel Container, Chicago; vice president, director of research and production of the Ceraseal Chemical Corporation at Chicago, and finally president of the company which he founded, Protective Coatings Corporation.

—J. F. B.

Fred F. Flanders

Dr. Fred F. Flanders, distinguished member of the American Chemical Society for forty-seven years, passed away at his home in Wellesley, Massachusetts, December 15, 1948. His wife, Winfred Hall Flanders, survives him.

He was a Fellow of the American Association for the Advancement of Science; a Fellow, since 1936, of THE AMERICAN INSTITUTE OF CHEMISTS, and a member of the Phi Beta Kappa. Although a native of California (born in Yola County, September 5, 1876), he received the A.B. and M.A. degrees from the State College of Washington in 1902 and 1905 respectively. Subsequently,

FROM ALKYD RESINS

TO DE-ICING PAINTS

Technical GLYCERINE NEWS

NEW-TYPE RESIN. Description: pale, semi-solid made by interaction of glycerine with rosin fraction of tall oil. Properties: tacky, stable, unaffected by humidity changes, has solubilizing action on many materials. Uses: has potential applications in protective coatings, soap, adhesives, and synthetic rubbers. (R-1)

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NEW METHOD DETERMINES GLYCERINE COLOR. A faster, more accurate method has been developed in the research laboratories of the Glycerine Producers' Association. The method, which utilizes the spectro-photometer, corrects defects of the old visual Lovibond method. (R-2)

★ ★ ★

APPROVED FIRE-RESISTANT DECORATIVE FINISH. Alkyd resins form the base for a new finish for interior decoration approved recently by the Bureau of Standards of Appeals of New York City. The coating is formed by spraying specially

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NEW CORK SUBSTITUTE. Glycerine is employed as a plasticizer to produce flexibility in a new cork substitute patented recently. The compound is claimed to have bulk density and resilience comparable to natural cork. (R-4)

★ ★ ★

ANTI-STICK COATING. Major problem in the use of bitumen-coated steel sheets in building trades is the adhesion of the tacky sheets to each other in storage. Answer to the problem may be a new anti-stick coating in which glycerine is an essential ingredient. (R-5)

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I should like to receive more information on the source of the items appearing in **Technical Glycerine News.** I have checked below those items which interest me.

☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4 ☐ R-5

NAME .....
COMPANY .....
ADDRESS .....

in 1912, he received the Ph.D. degree from Harvard.

From 1905 to 1908, he was assistant professor at the Washington State College and also state food analyst. The two following years he spent at the Seattle Laboratory of the Bureau of Chemistry, U.S. Department of Agriculture. In 1910, he came East and was appointed fellow in biological chemistry at the Harvard Medical School.

During World War I, he held a commission as Captain, and was placed in charge of the Central Medical Laboratory at Dijon, France. After the war, he was employed by the National Canners Association, directing the inspection of the Maine Sardine Section.

His real life work began in 1912, when he accepted a position as chemist with the Massachusetts Board of Insanity (now the Department of Mental Health), which continued, except for the war years and the two years with the Canners Association, until his retirement in 1946.

In 1923, the laboratory established by Dr. Flanders was transferred to the Department of Public Health, and to that laboratory was allotted the samples submitted by the State Purchasing Agent. A few years later this laboratory was transferred to the Commission on Administration and Finance.

Dr. Flanders devised the fundamental procedure as well as many of the specifications under which much of the State's purchases of foods and certain other articles supplied to the state institutions are made. He devised new apparatus, including a circulating water jacket for the bomb calorimeter. He devised methods of analysis; made specifications for many articles; supervised the analyses of samples, if submitted with bids, and also upon delivery to see that they conformed to the specifications. He devised many ingenious and accurate methods of analysis, some of which he published, but more of which were worthy of publication.

Among his avocations were music (violin), radio, and astronomy. He was a member of the American Radio Relay League and the Amateur Telescope Makers Association. He made a reflecting telescope and equipped it with a polar axis at his home in Wellesley, Mass.

Many young men and women chemists worked with him in the service of the Commonwealth, all of whom spoke highly of Dr. Flanders as a scientist, a chemist, a superior, and above all as a gentlemen.

Dr. Flanders and I occupied adjoining offices for nearly a quarter of a century. Many times during those years, I went to him for advice and always found his advice and suggestions to be of inestimable value. He builded well in starting the laboratory for use in the purchase of foods

and other commodities. This work has grown considerably since 1912, and the Purchase Laboratory of the Commission on Administration and Finance, as it exists today, is a fitting monument to the foresight, ability, and integrity of a fine gentlemen.

—Herman C. Lythgoe, F.A.I.C.

Charles A. Marlies

Charles A. Marlies, associate professor of chemical engineering at the City College of New York, died January 13, 1949, at the age of forty-three. He was born in New York, N.Y. and obtained the B.S. and Ch.E. degrees from the City College of New York and the A.M. and Ph.D. degrees from Columbia University. From 1931 to 1935, he was consulting chemist for Consumers' Research. He became an instructor at City College in 1935, assistant professor in 1937, and associate professor in 1947.

Dr. Marlies was active in group health work in New York, and in 1938 became president of the Cooperative Health Association, and later president of the Group Health Association, Inc., and of Group Health Cooperative, Inc. He also served as consultant in fats, waxes, petroleum and lubricants, soaps, adhesives, and metal plating. He was the author of a number of technical articles in these fields and co-author of "Principles of High Polymer Theory and Practice."

He was a member of the American Chemical Society, the American Society for Testing Materials, the Electrochemical Society, and the American Institute of Chemical Engineers. He became an Associate member of the American Institute of Chemists in 1930; a Fellow in 1931, and Life Member in 1944.

Dr. Marlies is survived by his wife, Mrs. Vivian Gochman Marlies, and a son, Michael.

Gloria Kahn Ellis

Mrs. Gloria Kahn Ellis died July 16, 1948, at the age of twenty-five. As Gloria Kahn, she received the B.S. degree in 1943 from Rutgers University. After several months as laboratory assistant with the Bakelite Company, she became chemist for the Standard Oil Company of California, Richmond, California. She left this position to be inducted into the Woman's Army Corps. She became an Associate of THE AMERICAN INSTITUTE OF CHEMISTS, in 1943.

Course on Chemical Plant Location

Dr. Raymond E. Kirk, F.A.I.C., dean of the graduate school of Polytechnic Institute of Brooklyn, New York, announces that a new kind of engineering course, Chemical Plant Location, will be given during the spring semester, by Dr. Robert S. Aries, F.A.I.C., adjunct professor of chemical engineering.

COUNCIL

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President, Lawrence H. Flett
Vice-president, Raymond E. Kirk
Secretary, Lloyd Van Doren
Treasurer, Frederick A. Hessel

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Lester F. Hoyt, *Niagara Chapter*
G. M. Juredine, *Ohio Chapter*
Donald B. Keyes, *At-Large*
R. H. Kienle, *At-Large*
Harold A. Levey, *Louisiana Chapter*
H. W. Mackinney, *New Jersey Chapter*
J. M. McIlvain, *At-Large*
C. P. Neidig, *At-Large*
E. H. Northey, *At-Large*
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Donald Price, *At-Large*
Charles W. Rivise, *Pennsylvania Chapter*
Royal E. Rostenbach, *Washington Chapter*
Maurice Siegel, *Baltimore Chapter*
Foster D. Snell, *Past President*
Charles L. Thomas, *Chicago Chapter*
James R. Withrow, *At-Large*
Lincoln T. Work, *At-Large*

March Meeting

The 255th meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held on March 9, 1949, at 6:00 p.m. at The Chemists' Club, New York, N. Y. President Lawrence H. Flett presided. The following officers and councilors were present: L. H. Flett, K. M. Herstein, F. A. Hessel, D. B. Keyes, R. E. Kirk, H. W. Mackinney, E. H. Northey, F. D. Snell, J. H. Staub, L. Van Doren, J. R. Withrow, and L. T. Work. Martin Meyer, chairman of the New York

Chapter, and V. F. Kimball were present.

The minutes of the preceding meeting were approved.

President Flett recommended that the price of THE CHEMIST to non-members of the A.I.C. be increased. Upon motion, Article XV of the By-Laws of the INSTITUTE were amended to read: ". . . The subscription fee to THE CHEMIST shall be two dollars ($2) a year for INSTITUTE members, *and three dollars* ($3.00) *a year for other subscribers.*" (A By-Law must be approved by a majority of those present at two successive Council meetings to become effective. The above amendment will be presented again at the April meeting of the Council.)

President Flett reported that he had appeared at the Pittsburgh Chemists' Club recently where he talked about the work of the INSTITUTE. He reported an increasing recognition of the INSTITUTE throughout the country. He announced that Syracuse University had requested an INSTITUTE speaker on the subject of the licensing of chemists.

New Jersey Senate Bill S94, which affects the rights of chemists freely to practice their professions was discussed. A report by A. J. Nydick, chairman of the Committee on the Chemist in Public Health, was presented, which stated that a letter and copy of S94 had been sent to each member of the New Jersey Chapter of the INSTITUTE. President Flett requested, and received approval of a letter which he planned to write to the president of the American Medical Association regarding the re-occurrence of such restrictive bills in state legislatures. Dr. Mackinney reported that the New Jersey Chapter had appointed a committee of three members to take such action as may be necessary to enlist the support of other groups toward defeating S94.

A letter from Benjamin Janer, F.A.I.C., of the Municipal Chemists of the City of New York was presented, in which Mr. Janer thanked the INSTITUTE for its assistance and asked continuing support of the Municipal Chemists' endeavors to raise the entrance salaries for the chemists in the employ of the City of New York.

President Flett read a letter from Dr. Alexander Silverman, F.A.I.C., in which he recommended that more publicity be given to the work of the chemists who create the medical products that contribute to better treatment of disease.

The Secretary reported that we now have a total of 2,353 members.

The following deaths were recorded with regret: Dr. Lotti J. Greiff, F.A.I.C., on February 21, 1949; Dr. Townes Randolph Leigh, F.A.I.C., on February 15, 1949; and Dr. Louis A. Olney, F.A.I.C., on February 10,

1949. The Secretary was requested to frame a resolution to cover these three people, each of whom has contributed greatly to the profession, though in different ways. The Secretary was also requested to make up a standard form of resolution, to be used hereafter for all deceased members of the INSTITUTE, which can be modified to include the contributions of each individual.

The Treasurer's report was presented and accepted.

A report from C. P. Neidig, chairman of the Committee on Activities of Younger Members, was presented.

Upon motion, the Western Pennsylvania Chapter of the INSTITUTE, which has been inactive since its officers moved from the area last year, was dissolved by the Council in accordance with Article VI, Section 1, of the Constitution.

Upon motion, the territory of the Pennsylvania Chapter was extended, as of May 1, 1949, to include the territory formerly held by the Western Pennsylvania Chapter, so that the Pennsylvania Chapter will now include the entire state. It was also suggested that the Pennsylvania Chapter send notices of its meetings to A.I.C. members in Delaware.

Upon motion, a committee composed of the Secretary of the INSTITUTE, and a representative of each chapter, was appointed to draw up a general constitution for the use of Chapters, with necessary local modifications to be contained in the By-Laws of such a constitution.

Dr. Meyer, chairman of the New York Chapter, announced that Dr. Donald B. Keyes, F.A.I.C. would receive the New York Chapter's first annual scroll award, "for his service and devotion to young chemists. His influence and guidance have brought happiness and distinction to those who have had the good fortune to be closely associated with him."

Dr. Meyer praised the diligence and activities of the members of the New York Chapter's committees and others associated with its work. He emphasized that the strength of the INSTITUTE lies in its active Chapters, and he recommended that a manual be prepared, in mimeographed form, telling how Chapters may be established. This information could be sent to key members in any area where there are enough members to form a chapter.

Dr. Keyes expressed his appreciation of the New York Chapter award. He affirmed that the future of the INSTITUTE depends upon its younger members. The Institute wants to know the problems of the younger chemists to help them in their professional careers.

John H. Staub, secretary-treasurer of the Pennsylvania Chapter, announced that the award of Honorary Membership in the INSTITUTE would be presented to Dr. E. R. Weidlein

at a meeting to be held on June second.

Dr. Mackinney reported on the activities of the New Jersey Chapter. Speakers will appear at Princeton University, Stevens Institute, and Rutgers University.

Mr. Herstein reported on the activities of the New York Chapter, including the work of its Committee on Student Relations, which has arranged talks at the local colleges.

Dr. Withrow reported that the annual meeting of the Executive Committee of the Ohio Chapter will be held in Columbus, April 8th, at which plans will be made for the following fiscal year.

President Flett stated that the Niagara Chapter had recently held a symposium on chemical education.

The following new members were elected:

LIFE MEMBER

Steiner, John
Research Chemist, The Miner Laboratories, 8 S. Dearborn, Chicago 6, Illinois.

FELLOWS

Elwood, Walter Leroy, Jr.
Chemical Engineer, Charles Pfizer & Company, 11 Bartlett Street, Brooklyn, New York.

Mason, Clarence Tyler
Director of Research, George Washington Carver Foundation, Tuskegee Institute, Alabama.

Muenzen, Joseph B. (S. J.)
Instructor in Chemistry, Canisius High School, 1180 Delaware Avenue, Buffalo, New York.

Pierce, Jerry Albert
Exploratory Technologist, Esso Standard Oil Company, Baton Rouge, La.

Plantinga, Oliver S.
Production Manager, Marathon Corporation, Chemical Division, Rothschild, Wisconsin.

Plunkett, Roy J.
Superintendent, Tetra Ethyl Lead Area, E. I. duPont de Nemours Company, Chambers Works, Penns Grove, New Jersey.

Price, Charles C., III.
Professor, and Head, Department of Chemistry, University of Notre Dame, Notre Dame, Indiana.

Putnam, Garth Louis
Research Associate in Chemical Engineering, University of Washington, Seattle 5, Washington.

Rose, Arthur
Associate Professor of Chemical Engineering, Pennsylvania State College, State College, Pennsylvania.

Rossman, Joseph
Patent Attorney, 1540 Land Title Building, Philadelphia, Penna.

Shereshefsky, J. Leon
Professor of Chemistry and Head of Department, Howard University, Washington, D. C.

Simha, Robert
Consultant, Division of Organic & Fibrous Materials, National Bureau of Standards, Washington 25, D. C.

Sonnichsen, Harold M.
Assistant Director of the Laboratories, Industrial Tape Corporation, New Brunswick, New Jersey.

Stevens, Donald R.
Senior Fellow-Petroleum Fellowship, Mellon Institute, 4400 5th Avenue, Pittsburgh 13, Pennsylvania.

Stiegman, Clarence Albert
Director of Technical Service, Oldbury Electro-Chemical Company, Niagara Falls, New York.

Thomas, Edmund B.
Professor of Chemistry, John Carroll University, University Heights, Cleveland 18, Ohio.

Turner, Robert Graham
Owner, The Turner Pharmacy, Brandon, Wisconsin.

Van Peursem, Ralph Lawrence
Supervisor, Industrial Chemistry Department, Rochester Institute of Technology, 65 Plymouth Avenue S., Rochester 8, New York.

Vaterrodt, Peter
Research Chemist, Lanolin Research Section, Botany Mills, Inc., 180 Dayton Avenue, Passaic, New Jersey.

Wilbur, Paul C.
Vice-President - Director of Research, Food Machinery and Chemical Corporation, 333 W. Julian Street, San Jose, California.

MEMBERS

Drake, John Richard, Jr.
Chemist, DeSoto Paint & Varnish Company, Box 446, Memphis 1, Tennessee.

Feola, John A.
Technical Advisor, The Ohio Boxboard Company, Rittman, Ohio.

Withrow, David D.
Director of Professional Service Division, Medical Department, Ayerst, McKenna & Harrison, Ltd., 22 East 40th Street, New York 17, New York.

There being no further business, adjournment was taken.

Dr. Gustav Egloff, F.A.I.C., lectured, March fourth, before the Inter-Club Council, Canton, Ohio, on "The Modern World Depends upon Petroleum." On March 17th, he spoke before the Controllers Institute of America, Mid-Day Club, Chicago, on "The Modern Oil Industry." He will speak, April 15th, before the National Petroleum Association, Cleveland, Ohio, on "Modern Research in the Oil Industry".

Local Chapter News

C. P. Neidig, F.A.I.C.

Baltimore Chapter

Chairman, Ralph W. Lamenzo
Vice chairman, E. S. Hauber, S. J.
Secretary-treasurer,
J. Bernard Edmunds
Representative to National Council,
Maurice Siegel
Reporter to The Chemist,
Richard B. Treash

On March 17th, the Baltimore Chapter visited the Baltimore Plant of McCormick and Company, world's largest spice and flavoring extract house. Dr. H. W. Kuhl, F.A.I.C., chief chemist of the company, acted as host. After a tour through the plant, the Chapter was treated to "tea as it should be made" in the famous McCormick Tea House. Three colored movies describing the growing, processing, and packaging of tea and spices followed.

Many Baltimore old-timers will remember the days when ships from the Orient unloaded bales of spices right at the entrance of the McCormick Plant, causing the harbor atmosphere to be pleasantly spiced. Today a nine-story, block-square building occupies a site on the harbor. In this very modern building the visitor is surprised to find hundreds of products processed and manufactured, from exotic orezano and basil leaves to everyday iron glue and roach powder. Six-hundred employees are needed in this plant to handle the numerous products which include over sixty different spices alone.

Acquisition of the A. Shilling Company of San Francisco about two years ago, has given McCormack not only pre-eminence in this country, but a world-wide market as well. The full impact of a world-wide spice trade comes upon the visitor when he observes dozens of automatic package filling machines in operation turning out hundreds of packages a minute.

Louisiana Chapter

Chairman, J. David Reid
Vice chairman, William H. King
Secretary-Treasurer, H. A. Schuyten
Representative to National Council,
H. A. Levey

Now that Mardi Gras is over, local meetings can be planned with some assurance that there will be a large attendance. The social life of New Orleans revolves around this spectacle for several months preceding the actual celebration.

New Jersey Chapter

Chairman, D. L. Cottle
Vice Chairman, R. W. McLachlan
Secretary, Harry Burrell
Treasurer, John B. Rust
Representative to National Council, H. W. Mackinney

At a recent council meeting, there was considerable discussion of New Jersey Senate Bill S94, which affects the rights of chemists to freely practice their professions. The following resolution was passed and a committee appointed to contact other professional societies. In addition the committee contacted the Senate Committee on Public Health, who advised that because of the objection raised on all sides, the bill is to be modified.

Resolution

Whereas: the Executive Council of the New Jersey Chapter of The American Institute of Chemists, after study of New Jersey Bill No. 94 "proposing an act defining and regulating the practice of medicine and surgery amending section 45:9-18 of the Revised Statutes and supplementing Title 45 of the Revised statutes," find ourselves opposed to the proposed act because:

We believe that the testing in question should not be regarded as practicing medicine and surgery.

We believe that, if regulation of the practice in question is required, it should be done on the basis of qualification, rather than on membership in any one related profession, and that other groups and profess'ons, including chemists, which may also possess those who might be equally well or better qualified, should not be excluded. Therefore,

Be it resolved: that our opinion in the matter be communicated to the Senate Committee on Public Health, whom we earnestly solicit that they study carefully the merits of the proposal and of alternate proposals, to the end that a decision may be arrived at and action taken that will benefit the public, and that will not prejudice the rights of any qualified persons, groups, or prfessions.

The Committee on Professional Education of College Students has arranged for speakers to appear at several local universities to discuss professionalism with chemistry seniors.

New York Chapter

Chairman, Martin Meyer
Vice chairman, Lincoln T. Work
Secretary-treasurer Maurice J. Kelly
Representative to National Council, Karl M. Herstein
Public Relations, G. A. Kirton

Dr. Donald B. Keyes, vice president of Heyden Chemical Corporation, was selected as the recipient of the first Honor Scroll of the New York Chapter. The citation reads: "For his service and devotion to young chemists. His influence and guidance have brought happinesss and distinction to those who have had the good fortune to be closely associated with him." The Honor Scroll will be presented to Dr. Keyes at a dinner meeting of the Chapter to be held May 18, 1949, at the Downtown Athletic Club, New York, N.Y.

At the March 24th meeting of the

Chapter a panel discussion was held on the subject: "How Good an Employer is Your Company?" The speakers were Dr. Howard Nechamkin of Pratt Institute and Mr. Herbert Silverman of the Materials Laboratory, Bureau of Ships, New York Naval Shipyard.

Washington Chapter

Chairman, Royal E. Rostenbach
Vice Chairman,
Thomas H. Tremearne
Secretary, Elizabeth M. Hewston
Treasurer, Jeffrey R. Stewart,
Representative to National Council,
R. E. Rostenbach

The Chapter met January 28th at the Potomac Electric Power Company Auditorium. The topic of the evening was a symposium on scientific manpower.

Dr. Rostenbach opened the meeting by presenting Honorary A.I.C. membership to Dr. W. T. Read, scientific advisor, Research and Development Group, General Staff, Department of the Army. Dr. Rostenbach then turned the meeting over to Dr. Read as moderator. The panel and topics were:

"Manpower and National Defense," J. C. O'Brien, National Security Resources Board. (Former executive officer, National Roster.)

"Manpower Training in the Armed Forces," Dr. D. M. Delo, chief, Personnel Section, Research Branch, Research and Development Group, General Staff, U.S. Army.

"Manpower and Civilian Government Agencies," Ernest J. Stocking, chief, Physical Science Section, Examining and Placement Division, Civil Service Commission.

"Manpower and Industry," H. B. DeVinny, assistant industrial relations director, The Davison Chemical Corporation, Baltimore 3, Maryland.

"Manpower and the Universities," Dr. B. D. Van Evera, F.A.I.C., professor, George Washington University.

National Defense

Mr. O'Brien began the discussion by stating that the relationship of manpower to national defense is a part of the general problem of mobilization of the nation in the event of war. At present, there is no way to build a reserve of especially trained groups, since there is practically full employment and therefore no incentive. It is very necessary that all plans for the utilization of manpower in the event of war be perfected, since this time it is likely that there would be no buffer states to bear the first brunt of the clash. It would be helpful if selective service could be so administered that there would be conservation of scientific manpower.

At present, the output of scientists is inadequate, particularly in the field of the doctorate. The planning board is also handicapped by the lack of adequate statistical data. It would be

helpful, if there could be a survey of the colleges and universities to answer the question as to what wartime job each could do.

In addition to being handicapped as to adequate knowledge of the actual degree of training of the manpower of the nation, the board is also plagued by the question of the pattern of mobilization. On the pro side are the arguments of the evils of absenteeism, competition for and piracy of labor, the lack of adequate housing, and the migration of workers. On the other hand should the government assume the right to dictate as to where to work when it is for another man's profit? With such dictation, it might well be necessary to supply transportation for the worker and his family, provide housing, and to consider the matter of reemployment rights.

Probably the best solution of the problem in the event of war would be to start on a voluntary basis and if this should break down, to use a national service law.

Armed Forces

Dr. Delo continued the discussion:

According to law a small percentage of officers may be sent to civilian educational institutions for further specialized training. Considerable numbers from all three services are now enrolled in graduate schools for advanced training in science and engineering. All of these officers have had considerable military experience in the interim between their former college or service academy training and their present enrollment in graduate school. They are usually good students and many of them do outstanding jobs. A very few continue to the Ph.D. level. It is not known what percentage directly utilize this graduate training after it has been completed, but a definite attempt is being made to do this within the system of rotation currently practiced by the Services.

On the enlisted level, the United States Armed Forces Institute (USAFI) makes it possible for men to take extension courses at graduate school, collegiate, or college level. The accreditation is monitored by the American Council on Education under a contract with the Department of the Army.

In addition, the Navy Department in particular has been active in arranging graduate educational programs for the civilian scientists and engineers employed in the Washington area. Some of the Army Technical Services have made similar arrangements with educational institutions near their laboratories.

In other words, a definite attempt is being made to raise the educational standards and to provide opportunities for individuals who are interested in either advancing their educational status or keeping up to date with new developments. The efficacy of this program will only be proven by its long-range results.

Government Agencies

Mr. Stocking stated that in the field of government, the need for technical personnel increases as the nation's population increases. The adequate satisfaction of this need depends upon the salary scale and the philosophies of the legislative and executive branches. Usually the government salary scale is enough below that of industry so that there is always some dissatisfaction. In 1947, there were 95,000 professional positions, of which 2,855 were chemists and 517 chemical engineers. The last two groups were distributed among the Public Health Service, Food and Drug Administration, Army, Navy, Agriculture, Commerce and Interior Departments. The demand is for persons with more advanced degrees, yet dissatisfaction is evidenced on both sides by the three and one-half per cent monthly turnover. Perhaps the greatest objection on the part of those entering service is the slow rate of advancement.

(The paper presented by Dr. B. D. Van Evera appears on pages 121-124 of this issue of THE CHEMIST.

A very lively discussion followed the presentation of these papers. Schools, industry, management and its labor policies, and the attitude of scientists, were all attacked and defended.

March Meeting

Dr. Henry H. Gardner, F.A.I.C., invited the Chapter and its guests to hold the March 16th meeting in the Gardner Laboratories. Dr. Richard S. Hunter, one of Dr. Gardner's Associates, spoke on "Manufacture and Application of Apparatus for Appearance Measurement." He discussed the many important contributions made by the Gardner Laboratories in the development of new and improved testing equipment especially for the paint and varnish industry. Other members of the laboratory staff demonstrated many of the instruments for the guests. To complete a very hospitable evening, the Gardners served solid and liquid refreshments which were greatly appreciated.

Shull Appointed

Kenneth E. Shull, F.A.I.C., chemist, Philadelphia Suburban Water Company, Bryn Mawr, Pennsylvania, has been appointed business manager of the *Catalyst*, publication of the Philadelphia Section of the American Chemical Society.

Dr. Louis Koenig, F.A.I.C., chairman of chemistry and chemical engineering research, Armour Research Foundation, Chicago, Illinois, spoke February 22nd, before the Syracuse Section of the American Chemical Society, on "Chemists, Doctors, Lawyers—and Money."

For Your Library

Annual Review of Microbiology

Vol. II. C. E. Clifton, editor; S. Raffel and H. A. Barker, associate editors. Annual Reviews, Inc., 1948. 484 *pp.* $6.00.

Volume II of this series contains eighteen reviews. Of these, the following should be of considerable interest to chemists: Genetics of the Fungi, by C. L. Lindegren; Bacterial Metabolism, by I. C. Gunsalus; The Metabolism of Malarial Parasites, by J. W. Moulder; Growth Factors for Micro-organisms, by S. A. Koser; Antibiotics by J. H. Bailey and C. J. Cavallito; The Mode of Action of Chemotherapeutic Agents, by R. D. Hotchkiss; Complement, by E. E. Ecker; The Nature of Antibodies, by D. H. Campbell; Pathogenic Streptococci, by C. H. Rammelkamp and J. H. Dingle; The Spirochetes, by G. E. Davis; Chemical Disinfectants, by O. Wyss, Microbiology of Drinking Water and Sewage, by J. Smit; Microbiology of Soil, by N. R. Smith, and Biological Nitrogen Fixation, by A. I. Virtanen.

After perusual of this volume, one comes to the conclusion that *Annual Review of Microbiology* is an authoritative publication. It covers a rapidly growing science that borders on many fields.

—Dr. Henry Tauber, F.A.I.C.

Modern Cosmeticology

By Ralph G. Harry. 3rd Revised Edition. Chemical Publishing Company, Inc., 1947. *xv plus* 515 *pp.* 5½" *x* 8½". $12.00.

Because of the steadily increasing interest in, and appreciation of, the necessary association between cosmetic products and the living bodily structures to which they are applied, this complete revision of *Modern Cosmeticology* is doubly welcome. To this reviewer, who missed the second edition, this latest version seems almost like a new book.

It is indeed an excellent book, one to which everyone that wishes to keep abreast of scientific developments in the cosmetics industry must come, sooner or later. It contains a wealth of information gathered from the author's experience with leading manufacturers and medical investigators in England, and it carries the blessing of the latter group in a friendly foreword by L. B. Mumford, M.D., of Manchester.

The number of chapters has been increased to forty-eight. They cover the histology of the skin, hair, nails, and teeth; nutrition of the skin; allergy and dermatitis; all types of preparations for cosmetic hygiene and embellishment of the person; antioxidents, preservatives, humectants, and coloring agents; and an outline

of manufacturing procedures. Those that hate to do their own digging in libraries will be grateful for other chapters on *Diet and Skin Health, The Chemical Examination of Cosmetic and Toilet Preparations, Cosmetic Facts and Fallacies;* possibly also for some of the heterogeneous collection of tables in the *Appendices.*

The text is well illustrated, and this edition has been greatly enhanced by many fine new colored plates. As the work is devoted mainly to the discussion of principles there are relatively few recipes for the various types of products; those given have been considerably improved by translating practically all the proprietary names that cluttered the first edition. The book is well printed on good paper; the format is pleasing. Instead of a separate bibliography a generous number of references to pertinent scientific and medical literature has been run into the text. There is a comprehensive index.

In view of all these unquestionable merits, *Modern Cosmeticology* deserves better editing. More careful scrutiny would undoubtedly have caught many errors and inconsistencies in spelling (*not* meaning British custom), queried some of the fuzzy expression, and suggested reorganization of acknowledged reprinted material to avoid weak repetition of what is presented better in other chapters. (As a gratuitous suggestion right now, it does seem as if, somewhere in two forewords, a preface, and an introduction, someone should have defined and delimited the coined word in the title.)

Maybe this is another of those books reprinted here from plates made in England. If so, it is a sad reflection of something-or-other that a book of this size—valuable as it is—has to cost five dollars more here than it does over there. Although this may not keep the public libraries or the various companies from buying it, it will undoubtedly dampen the enthusiasm of many deserving individuals who, after skimming the book, would love to dash right out and buy it for themselves. The economic situation in the printing industry is hard on both authors and publishers. It does seem too bad, somehow.

—Florence E. Wall, F.A.I.C.

Cottonseed and Cottonseed Products:

Their Chemistry and Chemical Technology: A Compendium. Edited by A. E. Bailey. Interscience Publishers. 1948. 8 *vo. xxiii* 905 *pp.* $17.50.

This monumental work, embodying the contributions of twenty-four authors in addition to the Editor, presented as one of a series of Monographs, is in fact almost encyclopedic in scope, presenting many facts about cottonseed and its products, ranging from the history of cotton culture to the manufacture of chemicals from cottonseed hulls and linters.

The inclusion of a large amount of statistical data, grading rules, and much other matter of economic rather than technologic interest should tend to make this volume a welcome addition to the library of everyone whose business, profession or casual interest touches cottonseed in any manner.

The book attempts to cover the far-flung ramifications of cottonseed and its commercial utilization, touching upon factory practice, pure chemistry, and nutritional experimentation and succeeds very creditably indeed.

One might have wished for perhaps slightly broader coverage of processes in those sections devoted to such, rather than presentation of only typical examples, but this slight fault must be overlooked in a work in which technology is only a part of a great collection of miscellaneous pertinent knowledge.

We are convinced, as stated above, and as was apparently the aim of the Editor and Publishers, that this book will have inestimable value as a reference work in its field.

—Alan Porter Lee, F.A.I.C.

Booklets

Publications of the National Bureau of Standards: The following may be obtained at listed prices from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

"M188 Microbiological Deterioration of Organic Materials: Its Prevention and Methods of Tests," Edward Abrams. Information on the deterioration of textiles, leather, and other materials, because of mildew and rot. 41 pp. 25 cents.

"C472 Table and Mollier Chart for Ammonia Below —60°F," Cyril H. Meyers, 3 pp. 10 cents.

"RP1923 Electrode Function (pH Response) of the Soda-Silica Glasses," Gerald F. Rynders, Oscar H. Grauer, and Donald Hubbard, 6. pp. 10 cents

"RP1918 Concentration of Isotopes of Mercury in Countercurrent Molecular Stills," Samuel L Madorsky, Paul Bradt, and Sidney Straus. 6 pp. 10 cents.

"RP1915 Thickness of Inhibiting Films on Grass Electrode Surfaces," Donald Hubbard, and Gerald F. Rynders. 6 pp. 10 cents.

"RP1919 Determination of Lactose Alone and in the Presence of Sucrose by the Method of Munson and Walker," Lester D. Hammond. 11 pp. 10 cents.

"RP1928 Mass Spectrometric Investigations of the Thermal Decomposition of Polymers," Leo A. Wall. 8 pp. 10 cents.

"RP1921 A method for the Electron Microscopy of Wool," Max Swordlow and Gloria S. Sieman. 15 pp. 10 cents.

"C474 Automotive Antifreezes," Donald B. Brooks and Ronald E. Streets. 16 pp. 15 cents.

"M192 New Advances in Printed Circuits," Aeronautical Board's Aircraft Radio and Electronics Committee symposium, 73 pp. 40 cents.

"CS105-48 Mineral Wool Insulation for Low Temperatures," (Supersedes CS105-43), 26 pp. 10 cents.

"CS12-48 Fuel Oils," (Supersedes CS12-40) 14 pp. 10 cents.

"R163-48 Coarse Aggregates (Crushed Stone, Gavel, and Slag)", (Supersedes R163-39) 17 pp. 10 cents.

"RP1927 Sources of Error in and Calibration of the f-Number of Photographic Lenses," Francis E. Washer, 13 pp. 10 cents.

"BMS113, Fire Resistance of Structural Clay Tile Partitions." 19 pp. 15 cents.

"Calco Technical Bulletin No. 806, Scientific Study of Rayon Dyeing." Paper by Dr. G. L. Royer, F.A.I.C., presented before the Canadian Association of Textile Colorists and Chemists at Montreal. Request it from Advertising Manager, Calco Chemical Division, American Cyanamid Company, Bound Brook, N.J.

"Electrical Thermometer for Remote and Multiple Indications. Model 918." Descriptive information. Weston Electrical Instrument Corporation, 617 Frelinghuysen Avenue, Newark 5, N. J.

"Industrial Wax Review" and "British Intelligence Objective Subcommittee Report on the German Montan-Wax Industry." Either or both of these publications are available in limited number through the courtesy of Charles S. Glickman, M. A.I.C., Please accompany your request with a three-cent stamp to cover postage. Address Box 34, THE CHEMIST.

"Careers in Engineering and Science," 68-page, illustrated brochure, giving career and guidance information in addition to details about entrance requirements and courses at Polytechnic Institute of Brooklyn. Address the Chairman of Admissions at Polytechnic, 99 Livingston Street, Brooklyn 2, N.Y.

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"New Immersion-type Micro-set Thermoregulator." Descriptive Sheet. Fisher Scientific Co., 717 Forbes Street, Pittsburgh, 19, Pa.

"An American Story." Four page leaflet commemorating Fiftieth Anniversary. The Goodyear Tire and Rubber Company, Akron, Ohio.

"Farrand Electron Multiplier Photometer." Bulletin 804. Description of a new instrument. Request it from Farrand Optical Company, Inc., 4401 Bronx Boulevard, N. Y. 66, New York.

"Uridine and Other Nucleic Acid Nucleosides." Descriptive information, Schwarz Laboratories, Inc., 202 East 44th Street, New York, N. Y.

"Partners In Research." Annual report, 1948, of Armour Research Foundation. Illinois Institute of Technology, 35 West 33rd Street, Chicago 16, Illinois.

"Non-Ionic Surface Active Agents." Table of physical properties. Available on request from Glyco Products Company, Inc., 26 Court Street, Brooklyn 2, N.Y.

"Services on Retainer." Eight-page leaflet available from Foster D. Snell, Inc., 29 West 15th Street, New York 11, New York.

"New Reinhold Books," 34-page catalog. Reinhold Publishing Corporation, 330 W. 42nd Street, New York 18, N.Y.

"New Fisher Horseshoe Support." Descriptive sheet. Fisher Scientific Co., 717 Forbes Street, Pittsburgh 19, Pa.

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Condensates

Ed. F. Degering, F.A.I.C.

No two human individuals are exactly alike. Variability is as much of a characteristic of human beings today as it is with all other species, and has been of living things throughout evolutionary history. Although no two persons are exactly alike, all human beings possess certain traits in common, and show certain similarities. The similarities and differences observable and measurable among people are the results of the interaction of genetic and environmental influences.

—Dr. Laurence H. Snyder, Dean, Graduate College, Univ. of Okla.

The position of agriculture as a supplier of raw materials is definitely threatened by the synthesis of organic acids, alcohol, fibers, glycerol, and other products from coal, natural gas, and petroleum. Despite these advances, it is estimated that the farm value of major agricultural products and by-products used by the chemical industry in 1947 is over one billion dollars.

—New International Year Book (1948).

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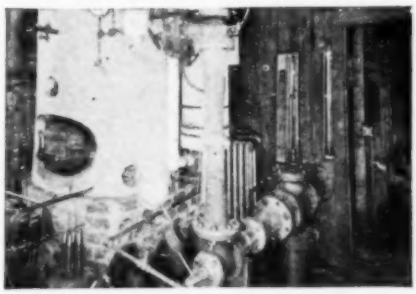

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—Dr. Andrew C. Ivey, Vice President, University of Illinois.

National Council Meeting

The National Council, A.I.C., will meet April 13, 1949, at The Chemists' Club, New York City.

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